

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
RESEARCH QUARTERLY PROGRESS REPORT
MR-6068 (REV.5/93)

1. TITLE DEVELOPMENT OF A NEW GUARDRAIL END TREATMENT (PHASE II)				2. FEDERAL STUDY NUMBER F98OR50 C	
3. OBJECTIVE To develop a guardrail end treatment for highways that meets federal crash worthiness requirements, is completely nongating, costs less than similar proprietary devices, does not need to be flared away from the shoulder and is easy to maintain.				2a. CONTRACT NUMBER N/A	
				4. EA (DIV-UNIT-EA) 65-338-680821	
5. PRESENT WORK PLAN APPROVED ON: Jul 1, 1997	6. ORIGINAL START Aug 7, 1997	7. ESTIMATED COMPLETION Dec 2003	8. TIME ELAPSED 74% (4%/qtr)	9. PROJECT COMPLETED TO DATE 18%	

10. List specific major steps or phases to accomplish the objective.

Use the following symbols to indicate planned progress.

Circle symbol when actually accomplished.

S = Starting Date, C = Estimated Completion Date

List of Tasks:

1. Concept development & basic material testing
2. Phase I Dynamic Testing (Basic Component Testing)
3. ~~Phase II Dynamic Testing (Optional Thermal Testing)~~
4. Phase III Dynamic Testing (Preliminary Full-scale Development Trials)
5. Phase IV Dynamic Testing (Compliance Tests)
6. Crash Test Data Analysis & Report
7. Publish and Distribute Report
8. Request Approval and Acceptance from FHWA & Traffic Operations
9. Implement device

FISCAL YEAR

Qtr.	00/01				01/02				02/03				Beyond
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	
Prior	Jul Sep	Oct Dec	Jan Mar	Apr Jun	Jul Sep	Oct Dec	Jan Mar	Apr Jun	Jul Sep	Oct Dec	Jan Mar	Apr Jun	
			(S)	Ⓢ	Ⓢ				C				
					Ⓢ		Ⓢ		S	C			
								Ⓢ					
										S	C		
											S	C	
												S	

11. EXPLAIN WHAT WAS DONE THIS QUARTER AND HOW IT COMPARES WITH WHAT WAS PROPOSED IN BLOCK 12 OF THE LAST QUARTERLY REPORT.
DESCRIBE ANY UNANTICIPATED PROBLEMS THAT AROSE THIS QUARTER OR ANY RECENT IMPLEMENTATION.

An alternative concept using cylindrical rubber marine fenders was modeled in finite elements. The simulation of an end-on crash test indicated that the concept was feasible for this type of impact. However, a simulation of NCHRP test 3-37 (lateral impact at the start of the length of need, 20 degrees, 100 km/h) has shown that the fenders are not stiff enough to redirect the vehicle.

12. BRIEFLY DESCRIBE THE WORK PLANNED FOR THE NEXT QUARTER ALONG WITH ANY PROJECTED DEVIATIONS FROM THE WORK PLAN OR ANTICIPATED MODIFICATIONS TO THE COST ESTIMATE OR THE WORK SCHEDULE.

The cylindrical marine fenders will be replaced with rectangular-shaped fenders. If the simulation of test 3-37 fails, then another alternative concept will be pursued.

13. Approved Funding		THIS FISCAL YEAR	TOTAL PROJECT	% EXPENDED TO DATE	14. Contractor Name	
		\$ 0	\$ 754,000		In-house	
Funds Expended To	Date 31 MAR 02	\$ 11,016	\$ 263,025	34.9 %	15. Responsible Unit Roadside Safety Research Branch	
Approved Caltrans PY's		1 PY'S	5.43 PY'S		16. Date 6 MAY 02	Quarter 3rd FY 02
PY's Expended To	Date 31 MAR 02	0.13 PY'S	2.57 PY'S	47.3 %	17. PI Signature (and Contract Monitor Initials)	